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Patent

Attorney's Docket No. 005950-763

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Dahl, et al.

Application No.: 10/017,821

Filed: December 12, 2001

For: PROCESSES FOR THE PURIFICATION
OF HIGHER DIAMONDOIDS AND
COMPOSITIONS COMPRISING SUCH
DIAMONDOIDS

Group Art Unit: Unassigned

Examiner: Unassigned

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INFORMATION DISCLOSURE STATEMENT
TRANSMITTAL LETTERAssistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Enclosed is an Information Disclosure Statement and accompanying form PTO-1449 for the
above-identified patent application.

- ☒ No additional fee for submission of an IDS is required.
- ☐ The fee of \$180.00 (126) as set forth in 37 C.F.R. § 1.17(p) is also enclosed.
- ☐ A certification under 37 C.F.R. § 1.97(e) is also enclosed.
- ☐ A certification under 37 C.F.R. § 1.97(e), and the fee of \$180.00 (126) as set forth
in 37 C.F.R. § 1.17(p) are also enclosed.
- ☐ Charge \$_____ to Deposit Account No. 02-4800 for the fee due.
- ☐ A check in the amount of \$_____ is enclosed for the fee due.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R.
§§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to
Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

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By:

William H. Benz
Registration No. 25,952

Date:

2/12/02



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INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56,
Applicants hereby submit the following information in conformance with 37 C.F.R. §§
1.97 and 1.98. Pursuant to 37 C.F.R. § 1.98(d), copies of the references cited below are
included herewith:

U.S. Patents

| <u>Patent Number</u> | <u>Name</u> | <u>Issue Date</u> |
|----------------------|-------------|-------------------|
| 3,457,318 | Capaldi | 7/22/69 |
| 3,832,332 | Thompson | 8/27/74 |
| 4,952,757 | Alexander | 8/28/90 |
| 4,952,748 | Alexander | 8/28/90 |

| <u>Patent Number</u> | <u>Name</u> | <u>Issue Date</u> |
|----------------------|-------------|-------------------|
| 4,952,749 | Alexander | 8/28/90 |
| 4,982,049 | Alexander | 1/1/91 |
| 5,017,734 | Baum | 5/21/91 |
| 5,019,665 | Partridge | 5/28/91 |
| 5,245,104 | Cullick | 9/14/93 |
| 5,268,513 | Shen | 12/7/93 |
| 5,298,666 | Shen | 3/29/94 |
| 5,306,851 | Wu | 4/26/94 |
| 5,347,063 | Shen | 9/13/94 |
| 5,369,213 | Shen | 11/29/94 |
| 5,380,947 | Chen | 1/10/95 |
| 5,382,684 | Moini | 1/17/95 |
| 5,397,488 | Chen | 3/14/95 |
| 5,410,092 | Shen | 4/25/95 |
| 5,414,189 | Chen | 5/9/95 |
| 5,430,193 | Shen | 7/4/95 |
| 5,461,184 | Swanson | 10/24/95 |
| 5,498,812 | Bradway | 3/12/96 |
| 5,576,355 | Chen | 11/19/96 |
| 6,235,851 | Ishii | 5/22/01 |

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| WO 95/11472 | 4/27/95 |
| EP 0399 851 | 11/20/96 |

Articles

Aczel, et al., "Stability of Adamantane and its Derivatives to Coal-liquefaction Conditions, and its implications toward the organic structure of Coal", *Fuel*, Vol. 58, pp. 228-230, (3/1979)

- Balaban, et al., Systemic Classification and Nomenclature of Diamond Hydrocarbons-I, *Tetrahedron*, 34, pp. 3599-3606, (1978)
- Badziag, P., et al., "Nanometre-sized Diamonds are More Stable than Graphite", *Nature*, Vol. 343, pp. 244-245, and 517
- Bagrii, Ye, et al., "Catalytic Breakdown of Paraffinic Hydrocarbons in the Presence of Adamantanes", *Petrol. Chem USSR*, Vol. 30, No. 2, pp. 131-134, (1990)
- Chung, et al., Recent Development in High-Energy Density Liquid Fuels, *Energy and Fuels*, 13, pp. 641-649, (1999)
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- Drexler, Eric K., *Nanosystems: Molecular Machinery Manufacturing and Computation*, John Wiley & Sons, pp.238-249, (1992)
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- Lin, et al., Natrual Occurrence of Tetramantane ($C_{22}H_{36}$), Pentamantane ($C_{26}H_{32}$), and Hexamantane ($C_{30}H_{36}$) in a Deep Petroleum Reservoir, *Fuel*, 74:10, pp. 1512-1521, (1995)
- McKervey, Synthetic Approaches to Large Diamondoid Hydrocarbonds, *Tetrahedron*, 36, pp. 971-992, (1980)
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- Oya, A, et al., "Carbonization of Adamantanes to a Graphitizable Carbon", *Fuel*, Vol. 60, pp. 667-669, (8/1981).
- Petrov, A., "Hydrocarbons of Adamantane Series as Indices of Petroleum Catagenesis Process", *Advances in Organic Geo Chemistry*, 6th International Meeting on Organic Geochemistry, pp. 517-522 (1973).

Prusova, D., "Liquid Chromatography of Adamantanes and Carbon Adsorbents", *J. Chrom.*, 234, pp. 1-11, (1982).

Rollman, L., et al., "Adamantanes From Petroleum, with Zeolites", American Chemical Study, 210th ACS National Meeting, Abstract and paper, 8/20/95) .

Sandia National Laboratories (2000), "World's First Diamond Micromachines Created at Sandia", Press Release, (2/22/2000), www.Sandia.gov

Schleyer, P., et al., "Nonacyclo[11.7.1.1^{2,18}.0^{3,16}.0^{4,13}.0^{5,10}.0^{6,14}.0^{7,11}.0^{15,20}]-Docosane, a Bastard Tetramantane", *J. of the Am. Chem. Soc.*, 90:8, letter to the editor, 8/28/68.

Shen, M., et al., "Finite T_d Symmetry Models for Diamond: From Adamantane to Superadamantane ($C_{35}H_{36}$)", *J. Am., Chem. Soc.*, Vol. 114, No. 2, pp 497-505, (1992).

Supryadkina, NY, et al., "Catalytic Dealkylation of Alkyladamantanes", *Petrol. Chem., USSR*, Vol. 28, No. 2, pp. 103-110, (1988)

Tominaga, K., et al., "Next-generation Fine Chemicals Raw Material-Adamantane", *Chem Econ & Eng. Review*, Vol. 17, No. 10, pp. 23-29, (10/1985).

Vodicka, L, et al., "High Performance Liquid Chromatography of Halogeno Derivatives of Adamantane and Diamantane", *J. Chrom.*, 270, pp. 199-205, (1983).

Wingert, W., "G.c.-m.s. Analysis of Diamondoid Hydrocarbons in Smackover Petroleums", *Fuel*, Vol. 71, pp. 37-42, (1/1992)

The documents are being submitted within three months of the filing or entry of the national stage of this application or before the first Office Action on the merits, whichever is later, therefore no fee or certification is required under 37 C.F.R. §1.97(b).

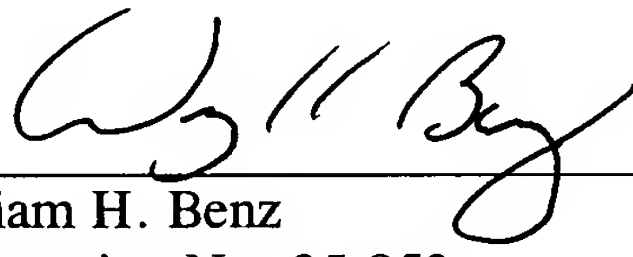
While this Information Disclosure Statement may contain "material" information pursuant to 37 C.F.R. § 1.56, it is not intended to constitute an admission that any patent, publication or other information referred to herein is "prior art" to the invention disclosed and claimed in the above-referenced application unless specifically designated as such.

Applicants specifically reserve the right, where appropriate, to antedate any such reference by the appropriate showing under 37 C.F.R. § 1.131 and § 1.608, or any other appropriate means.

This Information Disclosure Statement is not a representation that a search has been made or that no other information material to the patentability of this invention exists. To assist the Examiner, the document are listed on the attached form PTO-1449. It is respectfully requested that an Examiner-initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: 
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Phone: (650) 622-2300

Date:

Substitute for form 1449A/PTO

ATTORNEY'S DKT NO.
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STATEMENT BY APPLICANTAPPLICANT
Dahl, et al.FILING DATE
HerewithGROUP
UnassignedRECEIVED
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U.S. PATENT DOCUMENTS

| Examiner Initials | U.S. Patent Document | | Name of Patentee or Applicant of Cited Document | Date of Publication (MM-DD-YYYY) |
|----------------------|----------------------|-------------------------|--|-------------------------------------|
| | Number | Kind Code (if known) | | |
| | 3,457,318 | | Capaldi | 7/22/69 |
| | 3,832,332 | | Thompson | 8/27/74 |
| | 4,952,757 | | Alexander | 8/29/90 |
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| | 5,017,734 | | Baum | 5/21/91 |
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| | 5,245,104 | | Cullick | 9/14/93 |
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| | 5,306,851 | | Wu | 4/26/94 |
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| | 5,576,355 | | Chen | 11/19/96 |
| | 6,235,851 | | Ishii | 5/22/01 |

FOREIGN PATENT DOCUMENTS

| Examiner Initials | Foreign Patent Document | | Country | Date of Publication (MM-DD-YYYY) |
|----------------------|-------------------------|-------------------------|---------|-------------------------------------|
| | Number | Kind Code (if known) | | |
| | WO 95/11472 | | PCT | 4/27/95 |
| | EP 0399851 | | Europe | 11/20/96 |

NON PATENT LITERATURE DOCUMENTS

| Examiner Initials | Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. |
|----------------------|---|
| | Aczel, et al., "Stability of Adamantane and its Derivatives to Coal-liquefaction Conditions, and its implications toward the organic structure of Coal", <i>Fuel</i> , Vol. 58, pp. 228-230, (3/1979) |

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

Substitute for form 1449A/PTO

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005950-763

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10/017,821

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